

March - May 1969

SOUTH AUSTRALIAN SOCIETY OF MODEL
& EXPERIMENTAL ENGINEERS

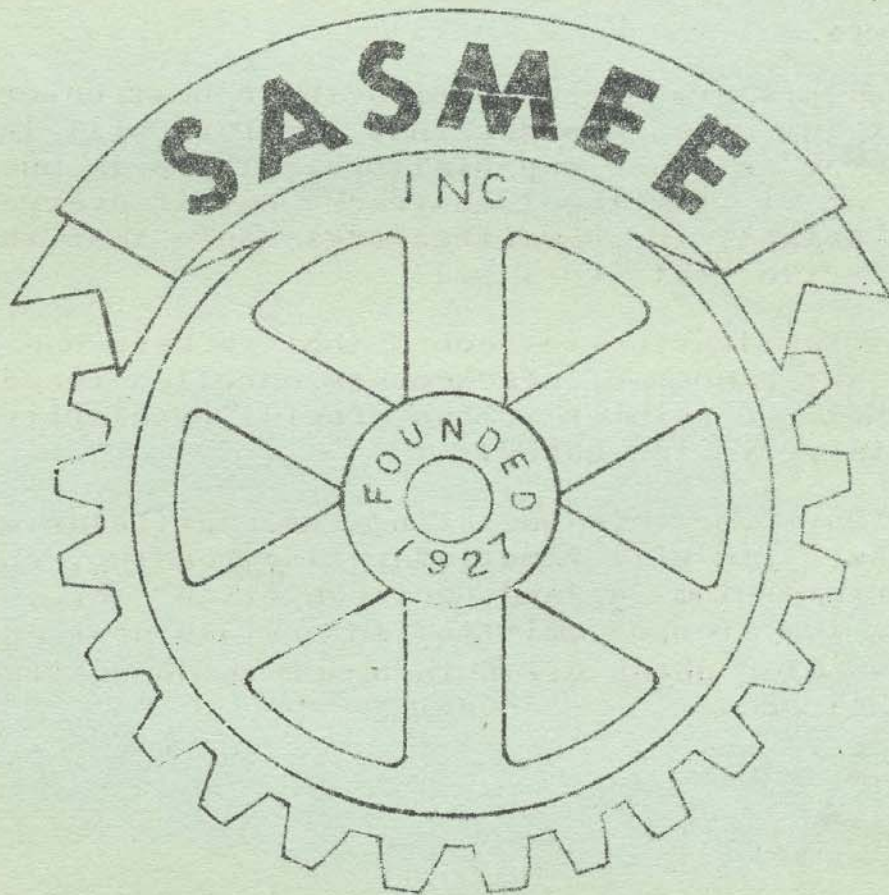
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S A S M E E

BULLETIN

THE OFFICIAL JOURNAL OF THE SOUTH AUSTRALIAN SOCIETY

OF MODEL AND EXPERIMENTAL ENGINEERS



EDITORIAL

At the time of writing, Christmas is already nearly a month behind us and the coming Easter Convention is only a matter of a few short weeks away. This, of course, is the chief topic of conversation among modellers all over Australia (apart from expansion joints of which more later) and we are all putting our best foot forward to make this occasion the highlight of this year.

Already we are receiving interstate enquiries regarding arrangements and we look forward to renewing friendships and making new friends when the big day arrives.

Members are urged to give their best co-operation at working bees in order that our Park will look at its best when we greet our visitors. There is much to be done, apart from the loco track, but if everyone pulls their weight, the committee feels sure that this Easter will be the best ever.

It is pleasing to record that we have had an excellent number of new members enrolled recently, this being a pointer to the growing popularity of of this very fine hobby.

I have for this Bulletin, three articles which I feel sure you will find interesting reading, so to save our printer Tom England, quite a bit of work, I am taking the step of omitting interstate news and making our own Club notes brief in order to do justice to our contributors.

QUARTERLEY AGENDA

GENERAL MEETINGS: 2nd Tuesdays each month at 8.00 p.m.
1967.

14th MARCH Claude Miller will give us one of his ever
welcome talks on Workshop Practice.

11th APRIL No speaker, but we are having a Brains Trust
question and answer evening so everybody think
up something to really make the Panel put on
their Thinking Caps.

9th MAY Annual General Meeting, Presentation of Reports
and election of officers.

INTERMEDIATE MEETINGS (Informal): 4th Tuesday each month
at 8.00 p.m.

28th MARCH. 25TH APRIL. 23RD MAY.

WORKING BEES: 3rd Saturday each month at 2.p.m.

PUBLIC FIELD DAYS 3rd Saturday each month at 2 p.m.
18TH MARCH 15TH APRIL 20TH MAY

CANTEEN ROSTERS

GENERAL CLUB MEETINGS (Tuesday nights)

MARCH

A. Symes
N. Kernick

APRIL

J. Mell
A. Brabham

MAY

M. Mitchell
K. Hall

RESERVES

A. Small. B. Greenslade. C. Miller (Tel. 46.1520).

CANTEEN ROSTERS (contd)

FIELD DAYS 3rd Saturdays each month.

<u>MARCH</u>	<u>APRIL</u>	<u>MAY</u>
J. Spry.	K. Hall.	A. Small.
A. Boreham.	G. Calvert.	G. Thomas.

RESERVES J. Spry. D. Irving. C. Miller.

PLEASE NOTE

'DO NOT FORGET THE MILK'

EXPANSION JOINTS

Our November Field Day was marred by the sudden heat wave caused severe buckling of the loco brack. At the December General Meeting the problem was discussed and an experimental design, the combination of several ideas submitted by members, was adopted and one of our members offered to construct 3 for a try-out.

At the meeting it was decided to call a special meeting on the 20th December for further discussion and on this occasion the original idea was thoroughly examined and with the aid of several members' ideas a modified type of box was evolved and the necessary milling maching work was carried out at my workshop by a team of engineers and also other machine work was done by another member. In the meantime most of the necessary concrete work has been done at several working bees and this points to a successful solution of the problem. Any Club contemplating the construction of a track would be well advised to study the problem of expansion and contraction and take steps to prevent this trouble if they have not already done so.

It is unfortunate to have this major job on our hands with other important jobs demanding attention to be in readiness for Easter, but as pointed out earlier we will smooth our difficulties with the co-operation of all concerned.

CLUB NEWS IN BRIEF

We have recently had the pleasure of two visitors from Sydney in the persons of Reg Wood and John Mann. Reg attended the December Meeting and gave us a talk of Boiler Safety Measures and spoke of the various aspects of this important matter and outlined the progress of the Australian Miniature Boiler Safety Committee.

John Mann who was on a brief holiday with his family in Adelaide visited my workshop whilst several members were milling expansion joint parts and gave us first hand information on the supply of B.A. bolts, nuts etc. He also had several suggestions on Injectors.

It has been decided to form a Track Committee whose duty will be to maintain the loco track. More of this later in the year.

We were deeply appreciative of the large number of Christmas Greeting Cards from Clubs all over Australia and also from individual members.

On November Field Day, several SASMEE members kindly exhibited their work at Carolew House, North Adelaide, to aid a fete organized by the Service of Youth Council. Thanks for your co-operation.

At the end of December Field Day, a barbeque was held at the Park, attended by wives and children of members. In the evening 'Uncle' Allan Frankham entertained us, much to the delight of the small fry, not to mention the elders. He clearly demonstrated that mouth-organ is a most remarkable musical instrument. At the conclusion of Allan's show Claude Miller turned on an excellent movie show and thus ended a most enjoyable day.

Our thanks are extended to all of those who by their efforts ensured the success of our Christmas Barbecue.

CLUB NEWS IN BRIEF (cont)

A word of appreciation to Tom England for the printing of the 'Bulletin'. There is quite a lot of work involved in this job apart from other chores that he helps with. He goes about the printing calmly and one can see the 'Bulletin' taking shape under his capable hands.

Whilst on the subject of appreciating members efforts, let us not overlook Frank Earle and his helpers for the grand job they are doing at the Club Room seats and also Grayson Calvert for the fencing work he has accomplished.

At a well attended Working bees in the evening during December, the lino was replaced on the Club Room floor.

Anybody requiring B.A. bolts, nuts etc., is asked to contact John Welch.

At the conclusion of January General Meeting we had a trial run of the Brains Trust and some very interesting questions were raised.

Paul Griscti requires information from any member who owns suitable patterns if they are willing to loan same for the use of others. Please contact him direct if you can help.

WELCOME TO NEW MEMBERS

It is very pleasing to extend a warm welcome to Alan Boreham, John Robbins, Malcolm Ambler, Leslie Mathews and William Menadue. We join in wishing you many happy hours of modelling and trust that you will interest yourselves in all of your club activities.

It is with great regret that we have had to accept the resignation of Mr. Harvey Hooper who, for many years has held the position of Vice Patron of SASMEE. In an interesting letter he explains that Father Time is providing too much for him to hold his office and urges us to offer the position to a younger man. We thank him for his assistance over the years and wish him good health and happiness in his retirement.

CLUB NEWS IN BRIEF Cont'd

I have received from Fred Hervus another copy of the 'Salisbury Society of Model Engineers Bulletin' and like the previous one, recently mentioned it proved very interesting to read. Mention is made of the progress they have made at their loco track in $3\frac{1}{2}$ " and 5" gauge, also a brief description of Rhodesia Railway Locomotives. I am taking the step of posting a copy of our Bulletin to their Secretary and feel sure that we would obtain benefit from an exchange of news from South Africa.

Mr. H.H. Bull (John) of Bilton Bay, Claremont, Tasmania mentioned in a Christmas Card that he would be pleased to forward details of his $3\frac{1}{2}$ " gauge 'St. Brannock' and track, a sketch of which he enclosed.

It is 122 yards to the lap and is roughly circular in plan. Curves are about 25 feet radius and there are some fairly severe gradients: 1 in 36, 1 in 26 and 1 in 24. There is a bridge 6 feet long and the only level part is 36 feet long. At one end there are running sheds and water and power points.

DESCRIPTION ST BRANNOCK

The loco is a $5\frac{1}{16}$ " version of the S/15 class of the ex Southern Railway locos. They were a mixed traffic job with 6ft wheels and most of the parts were interchangeable with the King Arthur Class. The driving wheels are 5" in diameter and the boiler has copper tubes round the fire instead of the usual fire box walls. Slide valves are fitted whereas the big girls have piston valves. Superheat is experimental and is a success. Two stainless steel tubes ($5/16$ ") lead from main steam pipe in smokebox back through 2 boiler tubes and the length of fire box before curving around to unite in a S/1 header in front of fire box. From there a $3/8$ " copper tube leads to main steam cross pipe. This tube is buried in lagging beneath the barrel. Cylinder machined from M/S and are unlined. Pistons in cast iron. After 100 miles of running there will be no sign of scoring. Cylinder dimensions $1\frac{1}{4}$ " x $1\frac{3}{4}$ ". W/P 100 P.S.I.

Description 'St. Brannock' Cont'd

Boiler is a 6" tube. All plates are arc welded. Tender is 14G steel and welded throughout and galvanised. Ball bearings fitted to axles. Oil pump to LBSC design. Loco steams well on N.S.W. coal and two home made injectors fitted. Driving wheels quartered in 4 jaw chuck. Big and little ends of con. rods and eccentric were welded on after fluting. Coil springs fitted to axles boxes which are made in C.I. and bushed with G.M. S/S fire bars and ashpan. Blow down cock with 3/8" ball and a 5/16" nipple with blind nut on injector feed line for boiler filling. Steam is raised with the aid of a vacuum cleaner and owing to design of superheater a small quantity of water can set the loco in motion so I always put her in mid gear as on one occasion the vacuum cleaner was dragged along the line for some distance. Raising steam is done with the aid of charcoal dipped in sump oil and then gradually feeding in coal until the pressure gauge takes an interest in the proceedings. Oil round, fill the tender, open blower and we are ready for business.

Thanks John for your description. Sorry I had to cut it down in places but space is a problem. Your boiler appears to be of steel, if so we would be interested to hear your experience of same as opposed to copper.

On a recent week end I had the privilege of visiting Brian Nieschke of Belair and saw an interesting sidelight on the modeller's activities.

CLUB NEWS IN BRIEF Cont'd

Perhaps I could head it;

'The Restoration of a Riley, Kestrel 26K 1936 1½ Litre'

I being an enthusiastic Riley owner, jumped at the chance of seeing such a rare car in south Australia and was greatly thrilled at viewing this superb piece of engineering.

Brian supplied me with 12 type written sheets on the restoration which I have had to cut down considerably but I hope to give you the main points.

I purchased the car in 1957, making me the third owner, (this being my second Riley) and became my daily means of transport suffering the vagrancies of the weather. The aluminium panels were cracked in various places thus allowing the rain to soak in on the wooden body framework. This created dry rot and I took the car off the road in July, 1962 with the intention of replacing the damaged woodwork, but instead I removed the engine and decided on a complete restoration.

The engine had received a complete overhaul some 10,000 previous to this step and I found that piston rings only were required. However, further inspection revealed that the camshaft bearings were worn. With the aid of my 4" Hercus lathe new bushes were made and fitted and the shaft ground .005 undersize. This left the centre bearing which was part of the case iron housing oval so a cutter bar was supported in the 2 outer bearings and slowly rotated by hand and fed into the case iron. This resulted in a perfect finish and the camshaft was hard chrome-plated and ground to size. A similar method was used to clean up a damaged oil thrower groove on the timing cover, this was then bushed and restored to its correct size. The oil pump was overhauled and considerable work done to the cylinder head. The compression ratio was raised by machining off 0.80.

'The Restoration of a Riley' Contd.

14 m.m. spark plugs in place of 18 m.m. plugs were fitted by bushing the original holes with C/I. Valve seat inserts from centrifugally cast chromium and nickel alloy iron were made and the inlet ports enlarged by 1/16". New valves were made and received a flash coating of hard chrome to reduce carbon deposits on stems.

Attention was paid to rocket arms and shafts and hardened valve stem caps fitted as often used in motor cycle practice. I decided to fit 2 s.u. carburetors and made a Y shaped pattern and core box for the new manifold. The foundry supplied a good aluminium casting, which I machined and attached to engine. (Details can be supplied if required).

The clutch and ring gear were then overhauled and the ring gear built up by gas welding and then came the tedious job of filing the contour and the chamfer lead by hand.

The gear box (a four speed Armstrong Pressselector) was stripped down and rebushed where necessary and I was surprised to find that few changes had been made in the design over the years.

First, second and third planet carriers required new bushes, pins and fore and aft seals renewed and the box assembled. The differential and torque tube were inspected and 1 ball race fitted to the U/J end, I found that the necessary clearance of crown wheel and pinion of .008" did not require any alteration from factory setting. This after 91,000 miles.

Rear hub splines needed attention, then new seals fitted to half shafts and differential was finished. The front axle, with its various ball points was restored to original condition and brake drums skimmed in my 4" lathe by packing up head stock and tool post.

Road wheels required some new spokes and trueing up and then were sand blasted and painted.

New springs and shackle bolts were made and all the various assemblies were put into the chasses and the whole lot primed and painted.

CLUB NEWS IN BRIEF - CONTINUED

'The Restoration of the Riley' - Contd.

An interesting point is the steering wheel. Over the years the original celluloid covering had peeled off in places, but I found that the M.T.T. Adelaide had a plastic process for their bus wheels and I was able to persuade them to treat mine in the same manner with very pleasing results. Other jobs, too numerous to mention had been completed meanwhile and I then turned my attention to the bodywork. The sheathing was removed and a start made on the doors. Rotten wood was replaced. Both rear wheel arches were remade, also the side sills which had rusted badly were fabricated from sheet metal. The front doors pillars were in bad shape also and woodwork above the w/screen and some intricate shaping to obtain the correct contour was involved. I can use most of the aluminium panels, but there will be quite a bit of panel beating to replace that which has gone too far. It only takes a few minutes to write of the body repairs but hundreds of hours have been spent in the restoration of the woodwork with many more ahead of me. Owing to lack of space it is difficult to describe all the various operations involved in body repair, but the aid of modern glues etc., has been a great help.

A rough estimate of hours worked so far is 1500 to 2000 hours.

Thanks Brian for an interesting description.

FIELD DAY JANUARY, 21ST 1967

In sultry and cloudy weather we held another successful track day with locos, speed boats and various other types of craft.

The public were entertained with train rides and all the thrill of live steam and in the steam House, Frank Earle and Mark Grimshaw were kept busy answering questions whilst tending their working models and boiler.

The canteen reported brisk business, the takings being a nice sum.

The boat were represented by the following members:

Charlie Manning	-	Atlantic
His son	-	Cargo boat.
Norm Kernick	-	3 Hydroplanes.
Herb Broker	-	Police Launch and Jumbo.
Bill Perrin	-	St. Francis drifter.
Jeff Cram	-	B/c tug and launch
Allan Wallace	-	Steam Freighter

The loco drivers and engines were as follows:

J. Wakefield	-	Bantam Cock 3½"
W. Worrall	-	Britannia 3½".
K. Bradford	-	Firefly 5".
T. England	-	Britannia 3½".
M. Turner	-	Britannia 5".
J. Moorfield	-	W.A.R. 3½".
R. Skewes	-	Jubilee 3½".
A. Brabham	-	900 Class Diesel 3½".
B. Smith	-	3½" Maisie.

The Following article was supplied by Ralph Excell describing a Holiday spent in the interior recently.

MODEL ENGINEERING IN CENTRAL AUSTRALIA.

On the 15th of August last year, I left Adelaide on a 3 week tour of Central and Northern Australia. My object was to see for myself, the many beauty spots and interesting towns of the Far North and that I heard and read about so often. I am very pleased to write that I was not disappointed in any manner whatsoever and my advice to intending tourists is that much of the beauty of our country is only to be seen by the keen observer. The subtle changes in the landscape, vegetation, climate and last but not least, the people; black and white; who dwell in this part of our continent.

Accompanied by my wife, I travelled to Alice Springs by train (The Ghan). As a matter of great interest to railway fans, we left Adelaide at 12.30 p.m. on a Monday in a diesel-hauled train straddling a gauge of 5'3". At 3.45 p.m. we changed trains at Pt. Pirie Junction to travel to Maree, this train running on standard gauge (4'8½"). Maree was reached at 10 p.m. and here another change was made in both trains and gauge. At 10.30 p.m. we departed for Alice Springs, this last portion of the train journey being made on narrow gauge track (3'6"). Three gauges in less than 12 hours. Where else in the world outside of Australia is this possible. Alice Springs was reached at 11.10 p.m. on Tuesday, 34 hours, 40 minutes to travel 933 miles.

A journey of 4 days was made at Alice Springs and from this town various trips were made to such well-known beauty spots as Palm Valley, Glen Heland and Ormiston Gorges, Standley Chasm, Simpson's Gap, Trephina Gorge and Hermannsberg Mission. What has all this preamble got to do with model engineering. Well you asked for it.

Residing in Alice Springs is a very busy man, none other than our country member, Ron Thomson. Besides being the Local Scout Master, taking a keen interest in his son's cycle racing, running a manufacturing sheet-metal work factory, he is ardent model engineer. Where he gets the time to lay 330 ft. of 7 1/4" gauge track and build an American Hudson 4-8-4 model locomotive in 7 1/4" gauge, only Ron himself can supply the answer.

With Ron's permission, the following paragraphs give a condensed description of his model.

Ron is adhering very closely to Henry Greenley's "words and music", drawn in 1937, an an American Hudson 4-8-4 in 7 1/4" gauge. The length of the loco is 76", the tender is 57" long, and, so with the 3" taken up by the loco-to-tender coupling, the over-all length is 136" (11'4"). This is certainly a lot of model. The 7 1/2" driving wheels (on 1 1/8" axles) are pushed around by a pair of stainless steel pistons (2 rings) in cast iron cylinders of 3" bore and 3 1/2" stroke. Steam control is by slide-valve actuated by Baker valve gear working under a boiler pressure of 85 lbs. per sq.in. supplied by a 9 1/2" diam. copper boiler in 8 gauge. The barrel is 31" long plus 17" of fire-box made from 3/16" H.R.C. sheet. The grate area is 108 sq.ins. and the fire hole is 2 1/4" square.

There are 49 fire tubes of 5/8 diam. by 34 1/2" long in 16 gauge and all stays, including crown and longitudinal, are of 3/8" diam. copper rod. There is no manual pump, but boiler water requirements are attended to by 2 Bassett-Lawke injectors. There are 5 outlets in the steam manifold to take care of the injectors, blower, 4 chime whistle and steam brakes on the loco, and the boiler on completion, was tested to 150 lbs per sq. in. The regulator is of the screw type (1" dia. x 14 T.P.I.) water gauge glasses 3/8" dia x 4 1/2" long and the 2 safety valves are set with a difference of 2 lbs. There is no provision for super-heating. The main frames are made from 6" x 3/8 M.S. plate. The leading and trailing bogie frames are from 1/2" plate, both with 4" dia. wheels on 7/8" dia. axles running in Phosphor-bronze bearings, as does the driving wheel axles.

The tender frame is fabricated from 1 1/2" x 1 1/2" x 3/16" MS angle iron and runs on 2 six-wheeled bogies with 5" wheels on 7/8" axles with the usual phosphor-bronze bearings. The copper water-hopper holds 12 gallons and the coal bin is at the rear of the driver's seat. The cylinders, bogie and tender wheels were cast in Perth and obtained with the help of Keith Watson of Rossmoyne. W.A. Drivers and coupled wheels were ex Bassett-Lawke. U.K. So much for the loco- and because Ron intends

to make good use of the ultimate result of his labours, his track building task is well under way. Made from 1" x 5/8" M.S. welded to M.S. sleepers 13" long at 12" centres, the two semi-circles of 48' radius joined by 2-14' straights given a total running track 330' long. There is a set of points as in full-size practice, controlling a siding 40' long which runs into the workshop and provides under-cover storage for the locomotive and passenger cars. The track is ballasted with 3/4" gravel and the station (Bandawallop) is provided with 2 electric lights made in replica of the old-fashioned gas lamps. I am sure Ron's effort will provide him, his family, and friends many happy hours of good steaming.

I could not very well stop at Tom's all night, because next morning I was due to leave by bus for Darwin. Many places of geographical significance were seen enroute. Central Mr. Sturt, The Devil's Marbles, the Katherine Gorge and the giant ant-hills, the tallest being 27' high. The township of Darwin was an eye-opener and there was much evidence of significant expansion. It was very apparent that the Northern Territory holds much potential both in cattle rearing and mining of minerals, and augurs well for the economic future of that part of Australia.

We returned to Alice Springs by the same bus and then travelled out to another interesting feature of the vast interior, namely, Ayer's Rock and the Olgas. These natural phenomenon are of world renown and my interest was satisfied with the personal achievement of climbing Ayer's Rock. I was thus privileged to see and realise the magnitude of the largest single rock in the world (12,000 million tons). Continuing our homeward journey, we were scheduled for an overnight stay in Coober-Pedy, but because of a bus breakdown, we had a prolonged but interesting stay in this town of the opal diggings. Our crude accommodation in this out-back did not compare very favourably with the comfortable under-ground homes of the miners, some of whose homes we were privileged to enter. Two years ago there were only 3 buildings above the ground but now the number has increased to about 15. With the arrival of the relief bus we journeyed on to Adelaide with many memories of our vast outback, and last but not least, of a distant, but energetic lone model engineer.

CONTRIBUTED BY. RALPH G. EXCELL.

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